

## Abstract

The invention relates to a reactor at least comprising, connected with each other in  
5 fluid-communicating fashion:

- a reaction area,  
whereby the reaction area comprises at least one solid-state catalyst;
- a coolable heat exchanger area,  
10 whereby the heat exchanger area comprises at least one housing,  
whereby the housing accommodates at least partially an insert,  
whereby the insert comprises a plurality of elements,

a process for oxidation of a hydrocarbon using the reactor, an oxidised hydrocarbon product  
obtainable by this process, chemical products, such as fibers, sheets, formed bodies and the  
15 like based on this oxidised hydrocarbon product as well as the use of this oxidised  
hydrocarbon product in chemical products of this type.